

This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.

## MATERIAL SPECIFICATIONS #2510

## Aluminum Alloy Castings, Investment Cast

7 Si - 0.3 Mg. (356-T6)

## Solution and Precipitation Treated

S.A.E. Specification AMS-4284C (11-1-54) is used as a general reference for these specifications.

1. Acknowledgement: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. Composition:

Silicon	6.5 - 7.5
Magnesium	0.20 - 0.40
Iron	0.6 max.
Manganese	0.30 max.
Zinc	0.30 max.
Copper	0.20 max.
Titanium	0.20 max.
Other impurities (ea.)	0.05 max.
Other impurities (total)	0.15 max.
Aluminum	Remainder

3. Condition: Solution and precipitation heat treated.

4. Technical Requirements:

4.1. Castings:

- 4.1.1. Castings; after removal from molds, shall be cooled at rates which will be as uniform as practicable for castings of each part number.

This document is part of an integrated file. If separated from the file it must be subjected to individual systematic review.

#### 4.2. Heat Treatment:

4.2.1. Production castings, shall be heated to the proper temperature and for the proper time for solution treatment and quenched at a rate not faster than that produced by immersion in water which is boiling at the time of immersion.

4.2.2. Production castings shall, after solution treatment, as in 4.2.1., be treated uniformly to not lower than 300° F, held at heat for not less than 1.5 hr., and cooled in air.

#### 5. Quality:

5.1. Castings shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external defects detrimental to fabrication or to performance of parts. Castings shall be well cleaned.

5.2. The castings shall be produced under the production quality control standards for non-aircraft parts in common usage by the vendor. The method of inspection, radiographic or other will be noted in the vendors quotation.

5.3. Castings shall not be repaired by plugging, welding, or other methods, without written permission from purchaser.

5.4. Castings shall not be impregnated, chemically treated, or coated to prevent leakage unless specified or allowed by written permission.

6. Approval:

- 6.1. To assure uniform quality, sample castings from new or reworked molds shall be approved by purchaser, unless such approval be waived.
- 6.2. Two sample castings from the new mold shall be approved by the purchaser before the production run is started by the vendor.
- 6.3. Vendor shall use the same foundry practices and the same heat treating procedures for production castings as for approved sample castings. If necessary to make any change, vendor shall notify purchaser immediately of such changes.

7. Rejections:

- 7.1. Castings not conforming to this specification or to authorized modifications will be subject to rejection.

8. Tools:

- 8.1. Vendor shall agree, in the absence of objection as noted in quotation, to keep and safeguard all permanent molds and tools resulting from this contract for a period of not less than two years from the date of contract termination. After this period the vendor shall dispose of them in accordance with the purchasers instructions. It is further agreed that said permanent molds and tools are the property of the U. S. Government.

9. General:

- 9.1. Three prints of the finished machining drawing shall be forwarded by the purchaser with the request for quotations. The vendor will mark all three prints as to location and amount of machining stock remaining as cast. Two of these prints will be forwarded to the purchaser with the quotation and shall be used as the casting drawings, except for changes to be mutually agreed upon by vendor and purchaser upon review of the quotation.
- 9.2. Three copies of this Specification #2510 shall be forwarded by the purchaser with the request for quotations. The vendor will mark in ink any proposed changes or additions on one of the two copies returned with the quotation. Agreement shall be reached by the purchaser and vendor on all proposals prior to letting the contract.